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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,423	08/12/2003	Yoshihiro Kato	241424US2S	5198

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EXAMINER

SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DM

Office Action Summary	Application No.	Applicant(s)	
	10/638,423	KATO, YOSHIHIRO	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-8, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Anezaki (US 4,185,223).

Regarding claim 1, Anezaki discloses an electrode for an electron gun, which is a first grid electrode (18) located on a cathode side (16), the first grid electrode being one of a plurality of electrodes for the electron gun used in an electrode gun assembly, wherein a surface of the first grid electrode is formed to be a rough surface having a higher degree of surface roughness than a surface of a second grid electrode (20) located adjacent to the first grid electrode (Fig. 1, first grid electrode shows a contour surface and second grid electrode shows a flat surface).

Regarding claim 6, Anezaki discloses a method of manufacturing an electrode for an electron gun, which is a first grid electrode (18) located on a cathode side (16), the first grid electrode being one of a plurality of electrodes for the electron gun used in an electrode gun assembly, wherein a surface of the first grid electrode is formed to be a rough surface having a higher degree of surface roughness than a surface of a second grid electrode located adjacent to the first grid electrode (Fig. 1, first grid electrode shows a contour surface and second grid electrode shows a flat surface).

Regarding claim 11, Anezaki discloses an electron gun assembly having an electron beam generating section that generates an electron beam, wherein the electron beam generating section comprises a cathode (16), a first grid electrode (18) located on the cathode

Art Unit: 2879

side, and a second grid electrode (20) located adjacent the first grid electrode, and a surface of the first grid electrode is formed to be a rough surface having a higher degree of surface roughness than a surface of the second grid electrode (Fig. 1, first grid electrode shows a contour surface and second grid electrode shows a flat surface).

Regarding claims 2, 7 and 12, Anezaki discloses an electron gun, an electrode and a method of manufacturing an electrode wherein the first grid electrode has a beam passage hole (28), and at least a peripheral portion (38) of the beam passage hole is formed to be a rough surface (Fig. 1).

Regarding claims 3, 8 and 13, Anezaki discloses an electron gun, an electrode and a method of manufacturing an electrode wherein the degree of surface roughness of the first grid electrode is higher than the degree of surface roughness of the second grid electrode (Fig. 1).

Regarding claims 5 and 15, in view of an absent of a showing that the method imparts distinctive structural characteristics to the final product, the limitations directed to the method of manufacturing are not germane to the issue of patentability of the device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anezaki (US 4,185,223).

Regarding claims 4, 9 and 14, Anezaki discloses the claimed invention except for the limitation of the surface roughness of the first grid electrode being in a range of 0.2 μ m to 1.5 μ m.

Art Unit: 2879

One skilled in the art would reasonable contemplate the optimization of the surface roughness within workable ranges as an obvious matter of design engineering. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide surface roughness of the first grid electrode being in a range of 0.2 μ m to 1.5 μ m, since optimization of workable ranges is considered an obvious matter of design engineering.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anezaki (US 4,185,223) in view of Ito et al. (US 4,919,634).

Regarding claim 10, Anezaki discloses a method of manufacturing an electron for an electron gun as claimed, but fails to disclose the limitation of the rough surface of the first grid electrode being formed by a surface reforming process. However, in the same field of endeavor, Ito discloses a method of manufacturing an electrode grid element for an electron gun, in which the rough surface of the electrode grid is made by a surface reforming process. The disclosed process is capable of preventing the occurrence of bulges during the formation of an electron beam pass aperture, mitigating the working force and prolonging the life of the coining tool. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the surface reforming step disclosed by Ito in the method of Anezaki in order to form the electrode grid rough surface while preventing the occurrence of bulges during the formation of an electron beam pass aperture, mitigating the working force and prolonging the life of the coining tool.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Art Unit: 2879

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mariceli Santiago
Primary Examiner
Art Unit 2879